



# Power Mac G5

Technology and Performance Overview  
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# Product Configurations and Options

## Standard Configurations

### Why buy a Power Mac G5?

- The 64-bit PowerPC G5 accelerates all types of applications, thanks to clock speeds of up to 2.7GHz, an optimized Velocity Engine, and two double-precision floating-point units.
- With dual independent frontside buses and high-speed, high-capacity memory, applications rip through work faster than ever before.
- Whether at work or at play, you'll enjoy eye-popping graphics, especially on stunning Apple Cinema Displays.
- Apple's most expandable Mac provides high-bandwidth connections for a full range of industry-standard, high-performance peripherals.
- An innovative enclosure design uses a superefficient thermal zone scheme and low-speed fans to stay cool and quiet.
- Mac OS X runs state-of-the-art professional applications, provides full 64-bit memory support, and protects existing software investments for a seamless transition to 64-bit computing.

Apple offers Power Mac G5 systems to meet the needs of professionals, media producers, educators, and researchers. The following standard configurations are available through the Apple Store and Apple Authorized Resellers.

Order number	M9747LL/A	M9748LL/A	M9749LL/A
Processor	Dual 2GHz PowerPC G5	Dual 2.3GHz PowerPC G5	Dual 2.7GHz PowerPC G5
L2 cache	512K per processor	512K per processor	512K per processor
Frontside bus	1GHz per processor	1.15GHz per processor	1.35GHz per processor
Main memory	512MB of PC3200 (400MHz) DDR SDRAM; supports up to 4GB	512MB of PC3200 (400MHz) DDR SDRAM; supports up to 8GB	512MB of PC3200 (400MHz) DDR SDRAM; supports up to 8GB
Graphics	ATI Radeon 9600 with 128MB of DDR SDRAM and two DVI ports	ATI Radeon 9600 with 128MB of DDR SDRAM and two DVI ports	ATI Radeon 9650 with 256MB of DDR SDRAM, one DVI port, and one dual-link DVI port
Hard drive	160GB Serial ATA <sup>3</sup>	250GB Serial ATA <sup>3</sup>	250GB Serial ATA <sup>3</sup>
Optical drive	16x SuperDrive with double-layer support (DVD+R DL/DVD±RW/CD-RW)		
PCI slots	Three open full-length 33MHz, 64-bit PCI slots	Three open full-length PCI-X slots: one 133MHz, 64-bit slot and two 100MHz, 64-bit slots	Three open full-length PCI-X slots: one 133MHz, 64-bit slot and two 100MHz, 64-bit slots
Expansion		One FireWire 800 port, two FireWire 400 ports (one on front); three USB 2.0 ports (one on front), two USB 1.1 ports (on keyboard); AGP 8X Pro slot with graphics card installed; two internal hard drive bays (one occupied)	
Audio		Optical digital audio input, optical digital audio output, analog audio input, analog audio output, front headphone minijack and speaker	
Networking		10/100/1000BASE-T Ethernet, AirPort Extreme ready, <sup>4</sup> optional Bluetooth 2.0 + EDR (Enhanced Data Rate), optional 56K V.92 modem <sup>10</sup>	
Software		Mac OS X, Dashboard, Mail, Safari, iChat AV, Address Book, QuickTime, iLife (includes iTunes, iPhoto, iMovie HD, iDVD, and GarageBand), iCal, DVD Player, Classic environment, Art Directors Toolkit X, GraphicConverter, Microsoft Office 2004 for Mac Test Drive, OmniGraffle, OmniOutliner, QuickBooks New User Edition, Zinio Reader, Xcode Developer Tools	
Service and support		90 days of toll-free telephone support and one-year limited warranty	
Also included		Apple Keyboard, Apple Mouse, USB keyboard extension cable, DVI to VGA Adapter, AirPort antenna	

## Build-to-Order Options

Order a custom-configured computer from the Apple Store or an Apple Authorized Reseller. Build-to-order options can include the following:

- Memory (PC3200 DDR SDRAM; installed in pairs): 512MB, 1GB, 2GB, 4GB, 8GB<sup>2</sup>
- Hard drives (Serial ATA): 160GB, 250GB, 400GB, two 400GB<sup>3</sup>
- Optical drive: 16x SuperDrive with double-layer support (DVD+R DL/DVD±RW/CD-RW), Combo drive (DVD-ROM/CD-RW)
- Graphics: ATI Radeon 9600 with 128MB of DDR SDRAM, ATI Radeon 9650 with 256MB of DDR SDRAM, NVIDIA GeForce 6800 Ultra DDL with 256MB of GDDR3 SDRAM (GeForce 6800 Ultra DDL occupies AGP slot and adjacent PCI slot)
- Wireless: AirPort Extreme Card, AirPort Express Base Station, AirPort Extreme Base Station,<sup>4</sup> Bluetooth 2.0 + EDR module with antenna, Apple Wireless Keyboard and Mouse
- External storage: Xserve RAID and Apple Fibre Channel PCI-X Card
- Networking: Gigabit Ethernet PCI-X Card, internal 56K V.92 modem<sup>10</sup>

## Apple Displays and Adapters

To complete your Power Mac G5 system, you can choose from Apple's family of all-digital, flat-panel displays.

- Apple Cinema Display (20-inch flat panel), order number M9177LL/A
- Apple Cinema HD Display (23-inch flat panel), order number M9178LL/A
- Apple Cinema HD Display (30-inch flat panel), order number M9179LL/A
- ADC to DVI Adapter, order number T2774G/A
- DVI to Video Adapter (for connecting S-video or composite devices), order number M9267G/A

## Other Products

These products are available to enhance your Power Mac G5 system.

- Audio: Apple iPod, iPod mini, iPod shuffle, Logitech Z-5500 5.1 speakers, Toslink optical digital cables
- Mac OS X Server

## Extended Service and Support

Purchase the AppleCare Protection Plan to extend your service and support to up to three full years. The plan provides support for your Mac, the Mac OS, and many Apple consumer applications, so just one phone call can help resolve most issues. You can also enroll one Apple display for coverage, provided that your Power Mac G5 and display are purchased together. For more information, visit [www.apple.com/support/products](http://www.apple.com/support/products).

# Technical Specifications

## Processing

- Dual 2GHz, dual 2.3GHz, or dual 2.7GHz 64-bit PowerPC G5 microprocessors
- PowerPC processor architecture with 64-bit data paths and registers
- Native support for 32-bit application code
- 512K on-chip L2 cache running at processor speed
- Parallel data structure supporting up to 215 simultaneous in-flight instructions
- Simultaneous issue of up to 10 out-of-order operations
- Dual-pipeline Velocity Engine for 128-bit single-instruction, multiple-data (SIMD) processing
- Two independent double-precision floating-point units
- Advanced three-component branch prediction logic
- Dual independent 1GHz, 1.15GHz, or 1.35GHz 64-bit DDR frontside buses supporting up to 21.6-GBps data throughput
- Point-to-point system controller

## Memory

- 128-bit data paths for up to 6.4-GBps memory throughput
- Dual 2GHz systems:
  - 512MB of PC3200 (400MHz) DDR SDRAM
  - Four DIMM slots supporting up to 4GB of main memory
- Dual 2.3GHz and dual 2.7GHz systems:
  - 512MB of PC3200 (400MHz) DDR SDRAM
  - Eight DIMM slots supporting up to 8GB of main memory
- Support for the following DIMMs (in pairs):
  - 256MB DIMMs (64-bit-wide, 128- or 256-Mbit)
  - 512MB DIMMs (64-bit-wide, 256-Mbit)
  - 1GB DIMMs (64-bit-wide, 256-Mbit)

### **Graphics and displays**

- AGP 8X Pro graphics slot supporting up to 2-GBps data throughput, with one of the following graphics cards installed:
  - ATI Radeon 9600 with 128MB of DDR SDRAM and two DVI ports
  - ATI Radeon 9650 with 256MB of DDR SDRAM, one DVI port, and one dual-link DVI port
  - NVIDIA GeForce 6800 Ultra DDL with 256MB of GDDR3 SDRAM and two dual-link DVI ports (build-to-order option; occupies AGP slot and adjacent PCI slot)
- Support for digital resolutions up to 1920 by 1200 pixels; dual-link DVI ports support up to 2560 by 1600 pixels
- Support for analog resolutions up to 1600 by 1200 pixels
- DVI to VGA Adapter included
- Dual display support for extended desktop and video mirroring modes
- Support for up to two Apple flat-panel displays<sup>6</sup>

### **Storage**

- Two 3.5-inch hard drive bays, each with a 150-MBps Serial ATA controller; one of the following is installed:
  - One 160GB 7200-rpm Serial ATA<sup>3</sup>; 8MB memory buffers
  - One 250GB 7200-rpm Serial ATA<sup>3</sup>; 8MB memory buffers
  - One or two 400GB 7200-rpm Serial ATA<sup>3</sup>; 8MB memory buffers (build-to-order option)
- Optical drive bay with one of the following installed:
  - 16x SuperDrive with double-layer support (DVD+R DL/DVD±RW/CD-RW); writes DVD-R discs at up to 16x speed, writes DVD+R DL discs at up to 4x speed, reads DVDs at up to 16x speed, writes CD-R and CD-RW discs at up to 24x speed, reads CDs at up to 32x speed
  - Combo drive (DVD-ROM/CD-RW); reads DVDs at up to 12x speed, writes CD-R discs at up to 32x speed, writes CD-RW discs at up to 10x speed, reads CDs at up to 32x speed

### **PCI expansion**

- Dual 2GHz systems:
  - Three open full-length 33MHz, 64-bit PCI slots
- Dual 2.3GHz and dual 2.7GHz systems:
  - One open full-length 133MHz, 64-bit PCI-X slot and two open full-length 100MHz, 64-bit PCI-X slots

### **Communications**

- 10/100/1000BASE-T Ethernet (RJ-45)
- Expansion slot for optional 54-Mbps AirPort Extreme Card (based on IEEE 802.11g standard; Wi-Fi Certified for 802.11g and 802.11b interoperability)<sup>4</sup>
- External AirPort Extreme antenna
- Optional internal Bluetooth 2.0 + EDR (Enhanced Data Rate) module and antenna
- Optional internal 56K V.92 modem (RJ-11)<sup>10</sup>

### **Peripherals and audio**

- One FireWire 800 port; two FireWire 400 ports (one on front panel; 15W total power)
- Three USB 2.0 ports (one on front panel); two USB 1.1 ports on keyboard
- Front headphone minijack and speaker
- Optical digital audio input and output Toslink connectors
- Stereo audio input and output minijacks

### **Electrical and environmental requirements**

- Meets ENERGY STAR requirements
- Line voltage: 100–125V AC or 200–240V AC
- Frequency: 50Hz to 60Hz, single phase
- Maximum current: 6.5A (low-voltage range) or 7.5A (high-voltage range)
- Operating temperature: 50° to 95° F (10° to 35° C)
- Storage temperature: –40° to 116° F (–40° to 47° C)
- Relative humidity: 5% to 95% noncondensing
- Maximum altitude: 10,000 feet

### **Size and weight**

- Height: 20.1 inches (51.1 cm)
- Width: 8.1 inches (20.6 cm)
- Depth: 18.7 inches (47.5 cm)
- Weight: 44.4 pounds (20.2 kg)<sup>11</sup>

## **For More Information**

For more information about the Power Mac G5, visit [www.apple.com/powermac](http://www.apple.com/powermac).

Internet access requires a compatible Internet service provider; fees may apply. Product contains electronic documentation. Backup copy of software is included. <sup>1</sup>Testing conducted by Apple in April 2005 using preproduction dual 2GHz, 2.3GHz, and 2.7GHz Power Mac G5 units; all other systems tested were shipping units. <sup>2</sup>Selected models. <sup>3</sup>1GB = 1 billion bytes; actual formatted capacity less. <sup>4</sup>Wireless Internet access requires AirPort Extreme Card, base station or other wireless access point, and Internet access (fees may apply). Achieving data rates up to 54 Mbps requires that all users have an AirPort Extreme Card and connect to an AirPort Express or AirPort Extreme Base Station. Some ISPs are not compatible with AirPort. Range may vary with site conditions. <sup>5</sup>Check with manufacturer for compatibility. <sup>6</sup>Second Apple flat-panel display may require ADC to DVI Adapter, sold separately. Connecting two 30-inch Apple Cinema HD Displays requires NVIDIA GeForce 6800 Ultra DDL card. <sup>7</sup>NVIDIA GeForce 6800 Ultra DDL card occupies the AGP slot and adjacent PCI slot. <sup>8</sup>Playback of high definition 1920-by-1080 H.264 video requires a compatible player or a dual processor Power Mac G5. <sup>9</sup>Actual rates will vary. <sup>10</sup>Compatible ISP and telephone services required. Your ISP may not support all V.92 features. Modem will function according to V.90 standards if V.92 services are not available. Actual modem speeds lower. <sup>11</sup>Weight varies by configuration and manufacturing process.

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